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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,606	09/28/2006	Teruyuki Sasaki	14434.111USWO	5238
52835 7590 09/09/2008 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902			EXAMINER WALTERS JR, ROBERT S	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 09/09/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,606	SASAKI ET AL.	
	Examiner	Art Unit	
	ROBERT S. WALTERS JR	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/28/2006, 12/26/2006, 4/12/2007, 7/16/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claims 1-15 are pending, claims 1-5 and 13-14 are withdrawn, and claims 6-12 and 15 are presented for examination.

Election/Restrictions

Applicant's election of claims 6-12 in the reply filed on 8/8/2008 is acknowledged. Applicant believes that claim 15 belongs in Group II and the examiner concurs and will examine it with claims 6-12. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

The disclosure is objected to because of the following informalities: It should have the appropriate section headings for the brief summary of the invention and the detailed description of the invention.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without

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underlining or bold type, as a section heading. If no text follows the section heading, the phrase “Not Applicable” should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A “Sequence Listing” is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required “Sequence Listing” is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 6-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamitani et al. (U.S. Pat. No. 6465108).

It should be noted that the claims as written only require a process for forming a silica-based film having a thickness of greater than 300 nm. The art applied teaches a method of providing a silica-based film having a thickness of greater than 300 nm, even though the film may not have good mechanical qualities it meets the requirements of the claims as written.

Kamitani teaches a process for producing an article with a silica-based film by a sol-gel process, the article including a substrate and a silica-based film that is formed on the substrate (abstract). Kamitani teaches that the process comprises applying a film-forming solution for forming the silica-based film to the substrate (abstract), which may be a glass substrate (column 8, lines 13-20), and then the substrate can be heated (column 6, lines 13-21). Kamitani further teaches that the film-forming solution contains a silicon alkoxide, specifically a tetraalkoxysilane

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(column 2, lines 47-54), with a concentration of 0.01 to 3% by weight in terms of SiO_2 , alcohol (column 2, lines 29-33), water in 0 to 10% by weight (column 2, line 37), a strong acid as 0.001 to 1 normality (column 2, line 36), and that after applying the substrate can be heated at 150 °C. Kamitani teaches that the concentration of the silicon alkoxide can be increased to greater than 3% by weight with the resulting film being greater than 300 nm (column 4, lines 36-40).

Kamitani fails to explicitly teach the film being substantially free from an organic substance, wherein the film-forming solution has the exactly claimed silicon alkoxide concentrations and the number of moles of water being at least four times and at most eight or ten times the total number of silicon atoms, or the film having a thickness of not less than 350 nm and less than 1 micron, as well as heating the film at greater than 150 to not more than 400 °C. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kamitani to have the number of moles of water being between four times and eight or ten times the total number of silicon atoms by routine optimization and one of ordinary skill in the art at the time of the invention would expect that this would necessarily lead to complete hydrolysis of the silicon alkoxide to provide a film that is substantially free from an organic substance. Furthermore, it would have been obvious to one of ordinary skill in the art to increase the concentration of silicon alkoxide to the claimed ranges through routine optimization to arrive at a film of between 350 nm to 1 micron, as Kamitani actually teaches that increasing the silicon alkoxide concentration increases the thickness of the film (column 4, lines 36-40). Kamitani also teaches that heating can be done above 150 °C (column 6, lines 17-21) and one of ordinary skill in the art at the time of the invention could have selected the claimed range through routine optimization.

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It should be noted that Kamitani teaches all the required process steps of the sol-gel process as well as the required elements in the film-forming solution, but fails to explicitly teach the selected concentration and temperature ranges. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to increase the concentration of the silicon alkoxide concentration to arrive at a film of greater than 300 nm (as actually taught by Kamitani), while at the same time adjusting the water, acid, and temperature parameters through process optimization to provide a film with good mechanical properties, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Conclusion

Claims 1-15 are pending.

Claims 1-5 and 13-14 are withdrawn.

Claims 6-12 and 15 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Thursday, 6:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT S. WALTERS JR/
September 8, 2008
Examiner, Art Unit 1792

/Michael Barr/
Supervisory Patent Examiner, Art Unit
1792
